

PLEASE AMEND THE CLAIMS AS INDICATED BELOW:

1-18. Canceled.

19. (Currently Amended) The method of claim [[18]] 40, further comprising the step of winding the pipe on a reel after placing and curing the compound.

20. (Currently Amended) The method of claim [[18]] 40, wherein the axial length of the annular region is in the range of 0.5 to 2 times the external diameter of the carrier pipe.

21. (Currently Amended) The method of claim [[18]] 40, wherein each of the sealing blocks is comprised of a material which is radially deformable material which projects radially when compressed axially and further including the step of axially compressing the sealing blocks to conform the radially outer margins thereof which is deformable to the shape of the respective inner and outer walls of the carrier pipe and the flow pipe.

22. (Previously Presented) The method of claim 21, further comprising installing a rigid bearing plate to bear against at least one lateral side of each of the sealing blocks.

23. (Previously Presented) The method of claim 22, wherein the bearing plate has a radial dimension that is less than the radial dimension of the annular space.

24. (Previously Presented) The method of claim 23, wherein:
the bearing plate is fastened to the outer wall of the flow pipe,
the bearing plate has a radially outer free edge and is so dimensioned as to define a gap between the free edge of the bearing plate and the inner wall of the carrier pipe.

25. (Previously Presented) The method of claim 24, wherein the bearing plate is made of metal.

26. (Currently Amended) The method of claim 21, wherein:
at the time of installation on the flow pipe assembly, each of the sealing block has a radial dimension less than the radial dimension of the annular space; and further including the step of subsequent to the installation of the carrier pipe around the flow pipe to define the annular space assembly, radially expanding the sealing block to bring its radially opposite faces into tight contact with the outer wall of the flow pipe and the inner wall of the carrier pipe.

27. (Previously Presented) The method of claim [[18]] 40, wherein the curable compound is an epoxy resin.

28. (Currently Amended) The method of claim [[18]] 40, further including the steps of: providing an injection orifice through the wall of the carrier pipe into the annular region; and injecting the curable compound into the annular region through the orifice.

29. (Previously Presented) The method of claim 28, wherein the curable compound is a thermosetting compound.

30. (Previously Presented) The method of claim 28, wherein the curable compound is curable at room temperature.

31. (Currently Amended) The method of claim 29, further comprising the steps of: reeling the rigid pipe onto a reel after assembly but before injecting placing the curable compound [[into]] in the annular region;
unreeling the rigid pipe from the reel,
introducing injecting the curable compound into the annular region after the pipe has been unreeled,
and
heating the annular region to accelerate the curing of the curable compound.

32. (Currently Amended) The method of claim [[18]] 40, further comprising the steps of:

reeling the rigid pipe onto a reel after assembly but before injecting placing the curable compound [[into]] in the annular region;

unreeling the rigid pipe from the reel,

introducing placing the curable compound [[into]] the annular region after the pipe has been unreeled, and

heating the annular region to accelerate the curing of the curable compound.

33. (Previously Presented) The method of claim 32, wherein the annular region is heated by passing it through a heater.

34. (Currently Amended) The method of claim 33, further comprising the step of straightening the pipe before heating the annular region to cure the compound.

35. (Previously Presented) The method of claim 34, wherein:
the pipe is straightened in straighteners in a pipe laying vessel; and
the annular region of the pipe is heated in a heater mounted after the straightener on the vessel along the path of movement of the pipe; and further including the step of moving the pipe from the reel through the straighteners and past the heater.

36. (Previously Presented) The method of claim [[18]] 40, wherein the curable compound has a pot life in the range of a few minutes to a few weeks.

37. (Currently Amended) The method of claim [[18]] 40, further comprising the steps of:

winding the pipe onto a receiving reel after introducing placing the curable compound [[into]] in the annular region;

transporting the reel carrying the pipe to a site for use of the pipe, and

unwinding the wound pipe from the reel at the site for use.

38. (Currently Amended) The method of claim 37, wherein; the curable compound is introduced into the annular region while the pipe is on land, the receiving reel is located on a pipe-laying vessel, and the wound reel is transported on the vessel to the site for laying of the pipe.

39. (Currently Amended) The method of claim 34, wherein the curable compound is injected into placed in the annular region regions after the pipe has been straightened.

40. (New) A method of manufacturing a reelable double-walled rigid pipe for underwater transportation of fluid which is capable of arresting longitudinal propagation of buckling, wherein the pipe comprises an inner flow pipe, the interior of which defines a passage for transporting the fluid, an outer carrier pipe which surrounds the flow pipe, and a plurality of longitudinally spaced separating elements between the inner and outer pipes which define an annular space therebetween, the method comprising:

selecting dimensions and properties of the inner pipe and the carrier pipe according to an intended application;

assembling a double walled pipe using the selected carrier and flow pipes, and the separating elements, and also including at least one pair of sealing blocks axially spaced apart between the outer wall of the flow pipe and the inner wall of the carrier pipe;

the sealing blocks having radially opposite faces and being dimensioned to be in contact respectively with the outer and inner walls of the flow pipe and the carrier pipe, to define a sealed annular region within the annular space;

spacing the sealing blocks so that the axial length of the annular region is at least equal to 0.5 times the external diameter of the carrier pipe;

placing a curable compound in the annular region; and

curing the compound in the annular region.

41. (New) A method of claim 40, wherein the step of assembling the double walled pipe further comprises including therein a plurality of pairs of axially spaced sealing blocks, thereby defining a plurality of annular regions.

42. (New) The method of claim 40, wherein the material and dimensions of the inner pipe are selected according to the properties of the fluid to be transported, and the external diameter and the wall thickness of the carrier pipe are selected according to the intended environment of use.

43. (New) A reelable double-walled rigid pipe for underwater transportation of fluid which is capable of arresting longitudinal propagation of buckling, the pipe comprising:
an inner flow pipe, the interior of which defines a passage for transporting the fluid;
an outer carrier pipe which surrounds the flow pipe,
dimensions and properties of the flow pipe and the carrier pipe being selected according to the intended application;
a plurality of longitudinally spaced separating elements between the inner and outer pipes which define an annular space therebetween;
at least one pair of sealing blocks axially spaced apart between the outer wall of the flow pipe and the inner wall of the carrier pipe,
the sealing blocks having radially opposite faces and being in contact respectively with the outer and inner walls of the flow pipe and the carrier pipe, to define a sealed annular region within the annular space,
the sealing blocks being spaced so that the axial length of the annular region is at least equal to 0.5 times the external diameter of the carrier pipe; and
a curable compound disposed in the annular region.

44. (New) The pipe according to claim 43, wherein the axial length of the annular region is in the range of 0.5 to 2 times the external diameter of the carrier pipe.

45. (New) The pipe according to claim 43, wherein:
each of the sealing blocks is comprised of a material which is radially deformable when compressed axially; and
the sealing blocks are compressed axially to conform the radially outer margins thereof to the shape of the respective inner and outer walls of the carrier pipe and the flow pipe.

46. (New) The pipe according to claim 45, further comprising a rigid bearing plate positioned against at least one lateral side of each of the sealing blocks.

47. (New) The pipe according to claim 46, wherein the bearing plate has a radial dimension that is less than the radial dimension of the annular space.

48. (New) The pipe according to claim 47, wherein the bearing plate:
is fastened to the outer wall of the flow pipe;
has a radially outer free edge; and
is dimensioned to define a gap between the free edge of the bearing plate and the inner wall of the carrier pipe.

49. (New) The pipe according to claim 48, wherein the bearing plate is made of metal.

50. (New) The pipe according to claim 43, wherein the curable compound is an epoxy resin.

51. (New) The pipe according to claim 43, further including an injection orifice through the wall of the carrier pipe into the annular region through which the curable compound is placed into the annular region.

52. (New) The pipe according to claim 51, wherein the curable compound is a thermosetting compound.

53. (New) The pipe according to claim 51, wherein the curable compound is curable at room temperature.

54. (New) The pipe according to claim 43, wherein the curable compound has a pot life in the range of a few minutes to a few weeks.

55. (New) The pipe according to claim 43, wherein the material and dimensions of the inner pipe are selected according to the properties of the fluid to be transported, and the external diameter and the wall thickness of the carrier pipe are selected according to the intended environment of use.

56. (New) The pipe according to claim 43, wherein there are a plurality of pairs of axially spaced sealing blocks, which respectively define a plurality of annular regions.

57. (New) A recyclable double-walled rigid pipe for underwater transportation of fluid which is capable of arresting longitudinal propagation of buckling, the pipe comprising:
an inner flow pipe, the interior of which defines a passage for transporting the fluid;
an outer carrier pipe which surrounds the flow pipe,
dimensions and properties of the flow pipe and the carrier pipe being selected according to the intended application; and
a plurality of longitudinally spaced separating elements between the inner and outer pipes which define an annular space therebetween;
at least one pair of sealing blocks axially spaced apart between the outer wall of the flow pipe and the inner wall of the carrier pipe,
the sealing blocks having radially opposite faces and being in contact respectively with the outer and inner walls of the flow pipe and the carrier pipe, to define a sealed annular region within the annular space,
the sealing blocks being spaced so that the axial length of the annular region is at least equal to 0.5 times the external diameter of the carrier pipe; and
a hardened curable compound disposed in the annular region.

58. (New) The pipe according to claim 57, wherein there are a plurality of pairs of axially spaced sealing blocks, which respectively define a plurality of annular regions.

59. (New) The pipe according to claim 57, wherein the axial length of the annular regions is in the range of 0.5 to 2 times the external diameter of the carrier pipe.

60. (New) The pipe according to claim 57, wherein:
each of the sealing blocks is comprised of a material which is radially deformable when compressed axially; and
the sealing blocks are compressed axially to conform the radially outer margins thereof to the shape of the respective inner and outer walls of the carrier pipe and the flow pipe.

61. (New) The pipe according to claim 60, further comprising a rigid bearing plate positioned against at least one lateral side of each of the sealing blocks.

62. (New) The pipe according to claim 61, wherein the bearing plate has a radial dimension that is less than the radial dimension of the annular space.

63. (New) The pipe according to claim 62, wherein the bearing plate:
is fastened to the outer wall of the flow pipe;
has a radially outer free edge; and
is dimensioned to define a gap between the free edge of the bearing plate and the inner wall of the carrier pipe.

64. (New) The pipe according to claim 63, wherein the bearing plate is made of metal.

65. (New) The pipe according to claim 57, wherein the curable compound is an epoxy resin.

66. (New) The pipe according to claim 57, further including injection orifices through the wall of the carrier pipe into the annular regions through which the curable compound is placed into the annular regions.

67. (New) The pipe according to claim 66, wherein the curable compound is a thermosetting compound.

68. (New) The pipe according to claim 66, wherein the curable compound is curable at room temperature.

69. (New) The pipe according to claim 57, wherein the curable compound has a pot life in the range of a few minutes to a few weeks.

70. (New) The pipe according to claim 57, wherein the material and dimensions of the inner pipe are selected according to the properties of the fluid to be transported, and the external diameter and the wall thickness of the carrier pipe are selected according to the intended environment of use.